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ABSTRACT

In exploring the integration of school and work, the question arises as to what secondary school programs will cost and who will pay. Jobs for the Future explored strategies that offer a more structured transition from high school to high skills careers for young people who are unlikely to complete college. The youth apprenticeship programs combine learning-by-doing under the tutelage of experts with the personal and professional development of young people. These programs suggest that school-to-career transition programs cost more than regular high school. Funding comes from a wide variety of sources. School districts and state departments of education are motivated by their interest in reducing dropout rates and ensuring greater student success. Three alternative models for effective and cost-efficient programs are (1) the independent teacher team; (2) the partially independent teacher team; and (3) no independent teacher team. Among the lessons drawn from case study examples of these models are the following: (1) provide incentives for schools and districts to participate; (2) allow enough development time; (3) give teachers responsibility, including hiring power; (4) provide for joint planning and teacher development; (5) provide student counseling; and (6) hold summer orientation. (Appendices provide information on design, staffing, budgets, start-up funding, and maintenance funding of the six case study programs.) (NLA)

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A Working Paper

How Much Does a Youth Apprenticeship Program Cost, and Who Will Pay for It?

Lessons from some long-standing school-to-work programs and youth apprenticeship programs under development

by Hannah Finan Roditi

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Abstract

With growing interest around the country in expanding the integration of school and work, the pressing question many are asking is: What will it cost, and who will pay? This paper extrapolates from some existing school-to-career programs to estimate answers to these questions. Its goal is to serve as a tool for program builders at the local level, to help them think through the implications of design on cost for schools and on the incentives for key funding partners. It may also help school district and state policy makers design incentives and allocate resources so as to support excellence and innovation at the local level. Neither the cost to employers nor the cost of the post-secondary component of youth apprenticeship is fully addressed in this paper. The focus is on the cost of secondary schooling.

This report was commissioned by Jobs for the Future, a non-profit organization that studies and analyzes workforce preparation, economic development, and education. In 1990, JFF embarked on a multi-year program to explore the potential of strategies that offer a more structured transition from high school to high skill careers for American young people who are unlikely to complete four years of college. This effort to adapt the lessons of European systems of school-to-work transition to economic and educational realities in this country is frequently labelled "youth apprenticeship": apprenticeship, because at the heart of these systems is the integration of school and workplace learning and an emphasis on learning-by-doing under the tutelage of experts; and youth, because these systems address the personal and professional development of young people.

As part of its research and development program, Jobs for the Future provides support and technical assistance to demonstration projects that link employers, secondary schools and post-secondary institutions in the development and implementation of new programs integrating school and work-based learning. In addition, Jobs for the Future studies and addresses policy issues likely to have an impact on the evolution of youth apprenticeship in this country. In both the site-specific and policy-oriented activities, JFF is committed to identifying obstacles and constraints to progress—and to proposing solutions.

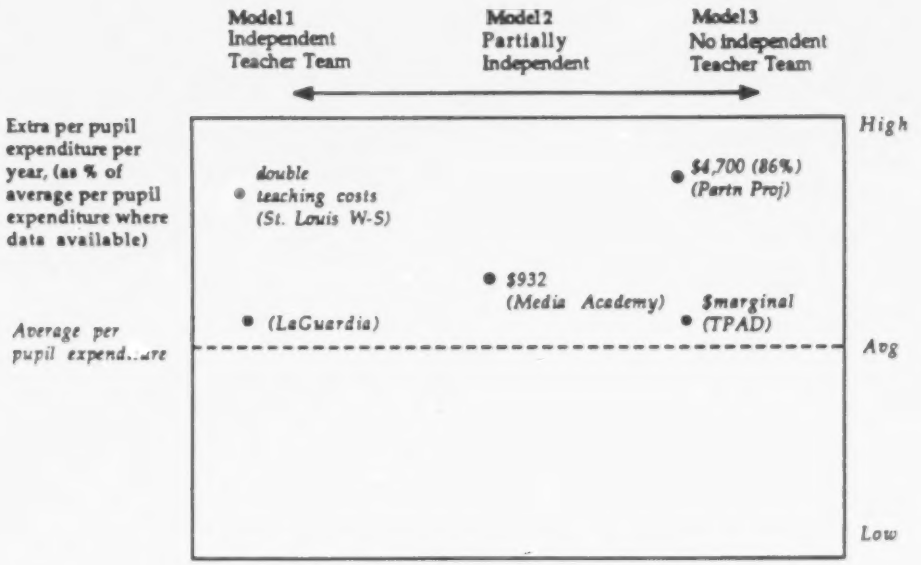
The programs we explored suggest that school-to-career transition programs do tend to cost more than regular high school, and youth apprenticeship is unlikely to be an exception. These programs are funded by a wide variety of sources. School districts and state Departments of Education which fund these programs are motivated by their interest in reducing the drop-out rate and ensuring greater success among their graduates. In some cases, these programs are also a source of revenue for particular schools, as for example in California's academies. Since schools are compensated for students in attendance each day, the significantly higher attendance rate in academies partially offsets costs.

Three alternative models are described: the independent teacher team, the partially independent team, and a model with no independent team. Case studies of existing programs which exhibit the characteristics of each model are presented. They teach valuable lessons, not just about cost, but about how design relates to cost. A proposal for how a youth apprenticeship program could be designed and funded is made for each model. Two of these proposals are actual programs in development. General lessons are drawn regarding incentives, administrative support, development time, teacher development, teacher responsibilities,

continued

responsibility for hiring, joint planning period, block scheduling, counseling support, and summer orientation activities. Finally, appendices provide detailed information on design, staffing, budgets, start-up funding, and maintenance funding.

The diagram below is a summary of the cost of the programs explored in the paper. This cost is *additional to average per pupil expenditures.* Since each program does different things and works with groups of students with very different needs, it would be a mistake to compare programs by cost. Rather, the graph suggests the parameters on additional cost that local actors have seen the need to fund. It also illustrates that differences in the independence of the teacher team are neither the sole nor principal determinants of cost.



Special thanks to those who were so willing to share their lessons with us. Without them we would indeed be re-inventing the wheel: Doug Berman, Brian Bosworth, David Ingram, Janet Leiberman, Frank Logan, Dennis Lose, Steve O'Donahue, Beverly Parks, Sheryl Wiley Solomon, Kathy Treves, and Jean Wolfe.

1. Introduction

1.1 Purpose. With growing interest around the country in expanding the integration of school and work, the pressing question many are asking is: What will it cost, who will pay? This paper extrapolates from some existing school to career programs to estimate answers to those questions. Its goal is to serve as a tool for program builders at the local level, to help them think through the implications of design on cost and on the incentives for key funding partners. Its purpose is also to contribute to a more informed ongoing dialogue of what youth apprenticeship programs cost and how they should be structured. The reader's reactions and thoughts are therefore welcomed.

1.2 Key characteristics of youth apprenticeship. This paper focuses on designing and funding youth apprenticeship programs. Though they are called different things by different people, the defining characteristics of this kind of school to career program attempt to bring together some of the best of European and U.S. experience with helping young people prepare for meaningful lives and careers. At its core, youth apprenticeship should:

- prepare students to enter a high skill, high wage, broadly defined occupational area;
- take young people at the end of 10th or 11th grade through a two to four year process connecting high school and the first year or two of postsecondary learning;
- include classroom instruction and paid workplace experience and learning in all years;
- provide both academic and occupational credentials, including: a high school diploma; up to two years of college credits towards an Associate degree transferable to a 4-year institution; and certification of technical competencies in the student's chosen field;
- ensure that workplace learning enhances and builds on classroom learning.

1.3 Methodology. The paper draws heavily on detailed design and budgeting information from five recognized school to career programs: the Portland Partnership Project, the Oakland Media Academy and Menlo Atherton Computer Academy, the St. Louis Work-Study Program, the TPAD Health Occupations Project, and the LaGuardia Middle College High School. The paper also draws on design and costing work conducted recently for the Pennsylvania Youth Apprenticeship Program and the Fort Wayne, Indiana, school system.

The five established programs were selected because all except one have been in operation for several years, and therefore have a cost history which we thought might provide useful information on shifts in costs after initial start-up. Perhaps even more useful, they differ widely in structure, the location of classes, the extent of an independent teaching staff, the grade levels involved, and the significance of the work component. Since these are all design elements that have yet to be fixed for youth apprenticeship, we thought it would be helpful to consider the range of models.

All cost data was provided voluntarily by program staff. Three out of the six programs were also visited.

1.4 How to read this paper. Sections 5, 6 and 7 form the heart of this paper, each section exploring the advantages and disadvantages of a significantly different model and its associated costs. Each section includes case studies of relevant programs and a discussion of a proposed youth apprenticeship program. Section 4 lays the foundation by describing some of the implications of the differences among the models. The appendices offer more detailed cost

and design information on each case study. Sections 2 and 3 discuss broadly the questions of whether youth apprenticeship costs more and how how key players think about cost. And Section 8 is a summary of lessons learned.

1.5 Caveats. The clearest lesson from this review of existing programs and several under development is that what makes programs work for students is the creativity and commitment of the teachers and administrators behind them. Each will build on available resources to respond differently to local needs. We hope these lessons and guidelines serve as an aid and complement to the pioneering work that must happen in each community. By no means are the findings or suggestions in this paper definitive.

2. Does youth apprenticeship cost more?

Does youth apprenticeship cost more than regular high school? Without a broad system and scale to youth apprenticeship, at this point, yes. It may also be that even with a broad system in place, youth apprenticeship will always require more resources to be done right than what we currently spend per high school student. But *how much more* depends on program design. Critical elements include:

2.1 The student-teacher ratio. The student-teacher ratio and the balance of time students spend on the job versus in the classroom are two key determinants of cost. The expense of a low student teacher ratio may in some cases be balanced out by less classroom time for students. Since learning at work is at the core of youth apprenticeship, we can expect that less teacher classroom time will always reduce cost, as long as teachers can be re-deployed. Except that teachers may need to be engaged in new kinds of work outside of class.

2.2 New responsibilities. These "new" responsibilities are the other major determinants of additional cost. For youth apprenticeship to work, teachers need to spend some time meeting with students and supervisors in the workplace. This helps students maximize their learning at work and enables teachers to gauge student progress and develop applied approaches to academic learning. Students will need orientation to such an unusual and high-commitment alternative. Someone needs to recruit and interview students. Someone also needs to recruit and train or orient employers and supervisors. And someone needs to act as troubleshooter and advisor who students or employers can call to have budding problems addressed. Who actually does these things can vary—in Portland's Partnership Project, the Program Director and Advisors do most of them; in the St.Louis Work-Study Program, the teachers do most of them—but they take someone's time.

Initially, teachers will need development opportunities beyond those provided by school districts. They will also need time to develop and experiment with innovative team teaching and cooperative learning methods and curriculum. They are likely to need more than the normal preparation time allocated to teachers. Recruiting employers and developing working relationships with supervisors are time-consuming activities, especially early on. Working out the logistics of transportation, enabling students to participate in extra-curricular activities, block scheduling of classes if students take some of their classes with regular students—these all take a significant amount of time at start-up and to a lesser extent on an ongoing basis.

3. How do school systems and other key players think about cost?

3.1 School Districts. Some school districts that have implemented innovative school-to-work programs answer the question "Does it cost more?" with another question: "More than what?" More than the regular high school program? Yes. But more than the cost to society of the average drop-out or under-achiever? No, far less, is their answer.

How school systems view the additional costs associated with school-to-work transition programs varies considerably. Under the crushing burden of budget cuts, superintendents are especially hard pressed to fund special programs. The pressure is to streamline.

Nonetheless, school districts have strong reasons for funding school-to-work programs. The principal incentive for school districts is to reduce their drop-out rates. This is the driving force behind the Portland school district picking up an increasingly large slice of the Portland Partnership Project's cost, according to its director. Some districts also are committed to providing a range of educational options for students, and it is accepted that some of these options will be more expensive than others. The St. Louis school district has supported its Work-Study Program for twenty years with the understanding that it has a responsibility to provide a range of viable options for students, according to the program's administrator. Strengthening links to the employer community can also increase the school districts' access to financial and other contributions from business and business foundations.

3.2 Schools. Similarly, the principal incentive for individual schools to help start a school-to-work program like this is to reduce their drop-out rates. A second incentive is that greater visibility in the employer community can result in donations of equipment and mentors to strengthen the school's other offerings. Schools may also view the start of one of these programs as a way to attract more district and outside funding. On the other hand, schools face some disincentives to spearheading school-to-work, and particularly youth apprenticeship, programs. In particular they may not fit easily into existing staffing and scheduling arrangements, may require work to find matching funding, and require treading in the often unfamiliar territory of employers.

3.3 Private Industry Councils and business groups. In the Portland Partnership Project's case, the Private Industry Council's initial funding to the program was twice that provided by the district. PIC leadership was convinced that funding the program was a sound preventive measure in keeping with the PIC's mission. The program would also help the PIC meet federal guidelines to which it was accountable.

Again in the case of the Portland Partnership Project, the business-run and funded Business Youth Exchange saw the program as something concrete and consistent with its mission to address workforce issues.

4. What are effective and cost-efficient designs?

What is the best and most cost-efficient design of a youth apprenticeship program? Because youth apprenticeship is so new to this country, and because European models have developed in such different political, educational, and economic systems, we are short on definitive answers to this question. But some important lessons can be learned from this country's experience with a variety of school-to-work transition programs. We can also draw lessons from the budding youth apprenticeship experiments underway at several sites around the country.

There is a range of possible ways to structure youth apprenticeship, and each has its implications for start-up cost, on-going cost, and incentives for key partners. Here we identify several clearly differentiated program models as representative of the many permutations that will inevitably result from innovation and adaptation by people who know best what they need at the local level. For each, we describe anticipated start-up and on-going costs, making clear what costs are above the cost of the regular high school program. We also note relevant incentives or disincentives for key players to participate. This section draws heavily on detailed design and budgeting information from five recognized school-to-work programs (see the appendices), and on design and costing work conducted recently by Jobs for the Future for the Pennsylvania Youth Apprenticeship Program.

We have taken some design parameters, the essentials for youth apprenticeship, as given. The program would:

- last 2-4 years, bridging the last one or two years of high school and one or two years thereafter;
- include work-based learning during the school year and summers;
- include a strong link between what is learned on the job and in academic classes; and
- involve the active participation of a workplace supervisor as a workplace teacher in the learning process.

But other design parameters are not taken as given. Important design questions are: (1) Who is the teaching team? (2) Where does classroom learning take place? (3) How much work-based learning should there be in each year? (4) Should the program start in 12th grade rather than 11th? (5) How closely integrated with work-based learning and high school are the post-secondary years? (6) Can youth apprenticeship—or its post-secondary component—be made accessible to adult workers?

4.1 Teaching team. The importance of the teaching team is that the more closely a small team of teachers works with a given group of students, the greater the continuity and support for students, and the greater the teacher's ability to connect learning in the classroom with the student's learning at work. Also, the more closely a team of teachers works on curriculum, the more inter-disciplinary connections students can make in their learning. Lastly, students stand a better chance of getting individualized instruction. All of these—continuity, support, and connection between classroom learning and workplace learning, between disciplines, and between teacher and student—are believed to be essential to effective learning. The size of the teaching team and the teacher-student ratio is a key determinant of cost. The responsibilities of teachers will also affect cost.

4.2 Location of classroom. The importance of location lies in the image it sets for the program (e.g. a community college campus may give it prestige in the eyes of high school students). Location can also influence the program's culture and expectations for achievement among staff and students. Where teaching occurs is a key determinant of staffing needs and the program's flexibility to build on the regular high school program.

4.3 Balance of classroom and work-based learning. Students need enough time to "get into" a job and to build on their classroom learning. They also need enough classroom learning to meet educational goals and to develop strong foundation skills. The balance of these types of learning affects teacher staffing needs. Programs more heavily weighted towards work-based learning are likely to require more staffing time for working with employers and supervisors.

4.4 Start year. Clearly a program starting in 12th grade would be easier to start up. Students might have a better idea of their interests. But this late start would deprive 11th graders of the program's benefits, leaving the 11th grade as what would be for some a wasted year. The program's start year would affect total, though not annual, cost per student.

What follows is a brief description of a range of options, from the most "stand alone" independent model to one which attempts to fit youth apprenticeship into already existing structures and staffing. The advantages and disadvantages of each are described.

5. The independent teacher team

The key characteristics of the independent teacher team model are: (1) Team teachers provide all class-based instruction for participating students; (2) Team teachers teach only participating students; (3) The team, including a coordinator or lead teacher, has considerable administrative independence; (4) The team is either based in a school or associated with a "lead" school or school district.

The team might be a group of three to five teachers dedicated to a group of 50 to 100 students. Some of the teachers would need to be certified to teach more than one subject. Teachers would plan curriculum and teach as a tightly knit team and would visit students' workplaces regularly. The classroom could be in a high school, or it could be at a location other than a high school—a community college, an employer, or a community site. A community college site in particular might lend the program prestige, expose students to a college campus, and set the stage for a new, more demanding culture around learning.

5.1 Based outside of high school. One advantage of this model is that by stepping outside the confines of the way things are typically done in high schools, teachers and students may in some instances be freer to pursue innovative alternatives. Another advantage is that if the classroom is centrally located or located near a cluster of employers, it may be easier for students from several districts to participate.

In general, one problem is that an independent program is likely to be more work to start up, and therefore also more difficult to replicate. Likewise, it may be more difficult for school systems to learn from a successful experiment lying outside their boundaries than inside them. Program teachers will be isolated from regular contact with other teachers. Another disadvantage is that students might find it difficult to participate in school-based extra-curricular activities or to receive the range of support services provided by schools. (For example, the teachers in one program with an entirely independent teacher team located away from any school acknowledge that their students don't benefit from the career counseling resources available at the regular high school.) The financial cost of the independent teacher team approach, regardless of where classes are held, is likely to be somewhat higher than traditional high school enrollment, particularly in the first year as the program gets up to scale.

5.2 High school based. One advantage of this model is that it might be somewhat easier to start up and replicate than a program located away from any school—not only among schools but among teachers within a school. Also, students would find it easier to participate in some extra-curricular activities and the social life of the school. One disadvantage is that dominant school culture, norms and rules might make it difficult for administrators, teachers, and students to raise expectations and to experiment with alternatives. A risk is that non-program teachers may be hostile to what may be seen as a favored program and set of teachers.

Dispersion in rural areas may impede the development of youth apprenticeship programs that lie outside high schools and that have a wholly dedicated teaching team because it might be difficult to find a sufficient number of students interested in a particular occupation, or to find a sufficient number of interested employers within a limited area.

5.3 Summary: lessons for the independent teacher team approach
Cost. The Middle College High School and the St. Louis Work-Study Program represent two extremes on the cost spectrum. One is marginally more expensive than regular high school, the

other is twice as expensive (in teacher time). Proposed models for the Pennsylvania Youth Apprenticeship Program would all be more costly than regular high school. There are two main reasons for this. One, teachers are taking on new roles and responsibilities—which requires time. Two, the student-teacher ratio is lower, partly because of the constraints on the number of work experience positions provided by employers within a logistically feasible geographic area.

Financing. Both the Middle College High School and the St. Louis Work-Study Program are almost entirely funded by the district from which all students come. In both cases the district is willing to shoulder the added cost. No attempt is made to recruit out-of-district students. Both are models which can work in large urban school systems with a large student body and a large district budget from which to draw. Initial proposals for the PYAP, on the other hand, confront the need, in less urban areas, to recruit students from multiple districts, with a resulting loss in revenue to each district referring a student. It may be difficult to get school systems to support this arrangement.

5.4 Case Study 1: The LaGuardia Middle College High School

Middle College High School, *sites around country*

Work-based learning: 13 weeks of unpaid work experience each year in high school.

Model: alternative school based on college campus. Size: 20 schools around country, up to 500 students per school.

Start-up funding: $195,000 (1971-1973); $60,000-$100,000 for 1991 replication. Source: foundations, school districts.

Operational funding: Average Daily Allowance for Alternative Schools. Source: State Department of Education.

Extra cost per student: unavailable.

The Middle College High School model, replicated at 20 sites around the country, is an alternative high school, grades 9 -12, of 100 to 500 students. It is *dissimilar* to the current definition of youth apprenticeship in that: it includes grades 9 and 10; it has legal standing as a school and has its own principal; there is no formal connection to post-secondary certification; and it is designed to reach full scale at 500. Youth apprenticeship programs are likely to be far smaller.

However, the first of these schools—the LaGuardia Middle College High School—provides a good example of the cost and scale required to run a totally independent high school which incorporates a significant work-based learning experience—13 weeks—in each year. It illustrates how cost can be kept within modest state funding formulae by shifting staff responsibilities and a different school culture, and how a high school program can be based at a community college. And it shows how start-up costs can be reduced over time as knowledge spreads and a model becomes more refined.

Cost and scale. The Middle College High School model does not cost much more than regular high school. It is funded entirely by district formula funding for alternative schools, with some support from the host community college. This makes it highly replicable and not viewed as a drain on the district's resources.

Cost minimization, staff responsibilities, school culture. What enables the Middle College schools to hold a lower student-teacher ratio (25:1 and lower) and additional teacher responsibilities (for coop supervision and internship development) within budget is that significantly fewer staff are involved in administrative work, and no staff have purely disciplinary responsibilities. The school relies on the community college for its security needs, which are considerably reduced due to the difference in school culture. Second, one third of students are out on coop part of the week. The time they spend on coop is supervised by a teacher who can manage up to 50 students. This contributes to a lower student-teacher ratio in classes.

Community college role. The host community college benefits by extending its visibility in the community to the students, but also to their extended families, many members of which begin to come in to take classes. The college also benefits by being able to use the Middle College High School's equipment for evening adult education classes. Finally, this is an opportunity for the host college to receive a small amount of additional funding from the legislature for the provision of security and janitorial services.

Reducing start-up costs. Although start-up costs for the LaGuardia Middle College program were close to $200,000 in the early 1970s, these costs have been reduced to between $60,000 and $100,000 for new start-ups since considerable experience has allowed the planning and development phase to be reduced from two years to seven months. Despite its cost-effectiveness, the Middle College's emphasis on work experience for all students limits its replicability to rural areas where transportation may be a problem, according to one school official.

5.5 Case Study 2: The St. Louis Work-Study Program

St. Louis Work-Study Program
Work-based learning: afternoon paid work placements for Seniors. Related classes in morning.
Model: three classes held in morning at work site or other non-school site. Size: 200 Seniors in seven occupational clusters.
Start-up funding: amount unavailable. Source: St. Louis School District.
Operational funding: amount unavailable. Source: St. Louis School District.
Extra cost per student: twice normal teaching costs.

The St. Louis Work-Study Program is for Seniors. They take three classes in the morning either at the work site or in a building in the community, and then go to work in the afternoons in unsubsidized paid positions. The program is *dissimilar* to youth apprenticeship in that: there is no formal connection to post-secondary certification; and the intent is to provide students with meaningful work experience rather than to prepare students for high skill technical trades. However, the program illustrates how a small-scale wholly independent teacher team can function and how it can be funded. It also illustrates flexibility in the location of classrooms and reflects a range of financial commitments from participating employers.

Teaching team responsibilities. With about 14 students per teacher, the two teachers in each work-study program have time to take on a variety of other roles. These include: recruitment (they visit area high schools and speak to students about the program, and hold information meetings for counselors and parents); selection of students; orientation; counseling; problem-solving with supervisors; addressing attendance problems of students (each teacher has a phone in the classroom and will immediately call home if the student is absent); evaluating student progress and learning on the job; curriculum development; and follow-up to track student progress after graduation.

Cost and funding. The program's major cost beyond the district's average is the cost of staffing a student-teacher ratio half the district's. The number of students in each program is constrained by the number of job slots offered by participating employers, but each program requires two teachers to meet the credit and course needs of students. As a result, the program costs the district about twice as much per senior as regular high school attendance. Minor administrative functions are performed by a school system administrator who supervises a number of programs, so this adds little to cost. All funding is provided by the St. Louis school district. Some employers provide classroom space and contribute to orientations and field trips.

Location of classrooms. Classrooms are located either in the community or at the employer site. The banking program is based in a city building owned by the Department of Education, so this is an invisible contribution. The Ralston Purina program is based at the company, which represents a contribution by business.

Employer financial commitments. The extent of employer involvement varies significantly. The most involved employer has donated equipment, paid for summer orientation of students, paid for awards ceremonies, and provides classroom space. Other employers provide paid work-study positions only.

5.6 A Proposal: The Pennsylvania Youth Apprenticeship Program

Pennsylvania Youth Apprenticeship Program, *in development*

Work-based learning: increasing portion of student's time spent at workplace over four years. Integration of school and work learning, curriculum.

Model: At Williamsport: two full-time teachers for about 23 metalworking youth apprentices based at college campus. Other sites: one full-time dedicated teacher with block scheduling in high school and other teachers rotating through class of youth apprentices.

Start-up funding: $370,000 for curriculum development and teacher training (1990-1992); $250,000 for state and site management (1990-1991), plus similar amount for 1991-1992. Source: U.S. Department of Labor, foundations, Pennsylvania Department of Commerce.

Operational funding: $200,000 for Williamsport expected for first year; $50,000 or less expected for other sites. Source: to be determined.

Extra cost per student: to be determined.

The Pennsylvania Youth Apprenticeship Program (PYAP), in the process of development, has offered a new opportunity to think through cost and financing issues. The first students (Juniors) in this 4-year metalworking program are anticipated in September 1991 at Williamsport and 1992 at other sites. PYAP's objective was to establish a design for youth apprenticeship that experimented with a dramatically different school and work model, including a wholly independent teaching team.

Problems with the multi-district approach. Initially the intent was to establish a multi-district model: classrooms outside the walls of any one school and not directly associated with any single school, each district paying for their students who enrolled. But few districts were attracted by this arrangement. No single district was sufficiently committed to the program to play a major role in making it happen, and many viewed the program simply as a revenue loss.

As a result, a single "lead" school in each area is now being identified to house the program and to take direct responsibility and credit for making the program happen. Under this arrangement, the sponsoring school district would not lose the revenue associated with their students who choose to participate. Other districts with students interested in participating would, however.

The challenge of achieving scale. Over the last six months, program implementors have confronted the difficulties of achieving the scale necessary to make the program financially feasible for school districts. Initial planning assumed a group of 50 apprentices for a per apprentice cost of $6,000 per year. With a group of 30 youth apprentices, however, cost becomes prohibitive given the original assumptions of the program's structure. So a number of options were considered, not all mutually exclusive.

Options considered. One option would be to abandon the teaching team approach, relying instead on "regular" teachers. Another option would be to cut the size of the teaching team from four teachers to three and employing them for only 50 extra days per year rather than 70. This would bring the 40 apprentice cluster down to $4,560 and the 30 apprentice cluster down to $6,250 per student. A third option would be to have one team of teachers work with two clusters of apprentices. A fourth possibility would be to subsidize teaching costs during the start-up years as the project reached full scale. Finally, the project could restrict itself to a single school district rather than several.

Section 9.3 offers an in-depth discussion of the costs and benefits of these options.

Two designs in development. By September 1991, Williamsport is expected to enroll about 23 metalworking youth apprentices at a first-year operational cost of $200,000. This includes the salaries of two full-time teachers and two part-time teachers based at a local university. Other sites will enroll their first students in September 1992, and will be based at local high schools, with one dedicated teacher and block scheduling so that youth apprentices stay together, with regular high school teachers rotating through. The extra per pupil cost is expected to be some of the cost of this dedicated teacher, until year two when the student-teacher ratio rises.

Start-up costs. Start-up costs include $370,000 for curriculum development and teacher training over two years (1990-1992) and state and site management costs of $250,000 over the first year (1990-1991). State and site management start-up costs will also be incurred over the second planning year (1991-1992).

6. The partially independent teacher team

The key characteristics of the partially independent teacher team model are: (1) Participating students take some special classes together, but some of their classes are with regular high school students and teachers; (2) Some but not all team teachers may teach regular high school students as well as youth apprentices; (3) The team, including a coordinator or lead teacher, has some administrative independence, but it is limited; (4) The team is based in a school.

This might include one or two teachers who teach courses geared particularly to youth apprenticeship students. Students would take their other classes with regular high school students and teachers. This is the Academy or "school within a school" model which has received considerable recognition for reducing drop-out rates and boosting post-secondary attendance. It requires less of a commitment on the part of all participants than the independent teacher team approach. This is likely to make it easier to start up and replicate. But many well-recognized Academies fall short on team teaching. Students often do not understand the connections between their classes. And classes taught by teachers outside the youth apprenticeship program are likely to use traditional teaching methods, as opposed to the experiential, team-based approach which is an important component of youth apprenticeship. Likewise, by diluting the teaching team, opportunities for linking work-based learning and classroom learning are likely to be lost.

6.1 Summary: lessons for the partially independent teacher team approach

Cost. This approach is potentially less costly than the independent team approach. For example, the academies—even the Menlo Atherton Computer Academy which includes related work experience—cost significantly less than the St. Louis Work-Study Program in extra teacher time. This is because only some of the teachers are taking on new roles, and because a reasonably high student-teacher ratio can be maintained by fitting students into regular high school classes. The downside is that these regular high school teachers will be less able to integrate students' classroom and work-based learning. The proposed Fort Wayne Youth Apprenticeship approach addresses this problem by paying for some of these teachers' time, to enable them to visit the work site.

Financing. The California academies suggest the range of sources of funding available, ranging from State Department of Education, to city, to school district, to school, etc. Clearly these sources of funding could potentially also be available to a program with a wholly independent teacher team. As is the case with the independent teacher team approach, incentives for other districts to refer their students are not strong, since they would lose revenue.

6.2 Case Study 1: Oakland Media Academy and Menlo Atherton Computer Academy
(See chart on next page)

The academies offer an example of a partially independent teacher team. Some of them—the Menlo Atherton Computer Academy is one example—also provide related work experience for students. The academy model generally provides a scheduled "block" of separate classes in several core subjects for academy students. The rest of the day (afternoons, for example), students take classes with regular high school students. In California, state-funded academies must maintain a low student-teacher ratio for more individualized attention. Most academies aim to maintain a personal atmosphere since their aim is to meet the needs of young people at risk of dropping out or of remaining unemployed and out of college after graduation.

Oakland Media Academy
Work-based learning: in development.
Model: school-within-a-school. Size: 150 10th-12th graders.
Start-up funding: $45,000 (1986). Source: school district.
Operational funding: $137,000 (1990). Source: State Department of Education, school district, City of Oakland, foundations.
Annual extra cost per enrolled student: $932.
Total extra cost per graduate: $3,425.

The academies are *dissimilar* from youth apprenticeship in that they do not all offer related work experience, they are strongly oriented towards preparing students to enter four year college programs and are weaker on equipping them with the foundation for advancement in technical trades not necessarily requiring a BA. In addition, many academies involve minimal cross-disciplinary teaching and linkage between what students are learning in school and at work.

However, the academies provide useful insights into start-up funding, the additional cost of running a "school within a school," alternative ways of funding this additional cost, and staffing and resource allocation issues.

Start-up funding. The Oakland Media Academy received $45,000 in start-up funding from the district in 1986. But state-sponsored academies receive only $15,000 in start-up funding from the state Department of Education. A large number of California academies have begun with this level of funding for planning purposes.

Additional cost. State-funded academies in California receive $67,000 per year as long as they have at least 90 students enrolled (they tend to be around this size). This is expected to cover the expense of an additional full-time teacher (due to mandated low student-teacher ratios), and other operational costs which may come up. Once the full cost per student enrolled each year is accounted for, the Media Academy costs about $900 more than the regular high school program. The *total cost per graduate* of the academy is about $3,400 more than the regular high school program.

Funding. Who pays for this? A wide-ranging combination of state Department of Education, school district, school, city, business, and student fundraising. The City of Oakland's Redevelopment Authority recently allocated a significant amount of funding to the academies in order to leverage change. One goal is to get student-teacher ratios low enough to enable some academies to quality as state academies. This would make them eligible for state DOE funding. Some of the city's money will be used to develop related work experience components. An incentive for schools and districts to develop academies is that they generally have a higher attendance rate. Since schools get $17 per day for each student who attends school, hosting an academy can increase a school and a district's revenue—by as much as $90,000 per year according to the Stanford Mid-Peninsula Urban Coalition.

Staffing and resource allocation. Unlike other school and work transition programs, academies do not have separate administrators. In academies, administrative, coordination and planning functions are carried out by a lead teacher or by several teachers. It is critical to budget sufficient planning time for the development and maintenance of program components. For example, related work experience has never really happened at the Media Academy because of inadequate planning time, according to the academy's lead teacher and sole administrator. This teacher and another are given only one additional planning period each to carry out all the administrative and development responsibilities for the academy.

At the Menlo Atherton Computer Academy, on the other hand, a teacher is paid for 20 hours beyond her full-time teaching job to do the job placement and counseling. In addition, the school district pays for each academy teacher to have an extra common planning period so they can plan lessons together.

6.3 A Proposal: A Fort Wayne Youth Apprenticeship Program

Fort Wayne Youth Apprenticeship Program, *in development*

Work-based learning: increasing portion of student's time spent at workplace over four years. Integration of school and work learning, curriculum.

Model: in development.

Start-up funding: expected to be $150,000. Source: requesting foundation funding.

Operational funding: expected to be about $94,000. Source: school districts, business.

Extra cost per student: expected to be $2,700-$3,800.

A semi-independent school-based approach is under development in Fort Wayne, Indiana, in several potential occupational areas. The first students are expected to enroll for September 1992. The following summary of the design and cost estimates for this program come from work conducted for Fort Wayne by consultant Brian Bosworth.

First two years. The program would be sponsored by a school district and housed in a high school. The 25-35 Juniors starting out would take their classes as a group, but with regular teachers. One teacher would be dedicated full-time to the program, as a coordinator. This person would, for example, develop ways to help students reflect on their work experience, develop a portfolio approach to demonstrating competencies, work with other participating teachers on team teaching opportunities, and visit workplaces. Four regular teachers would offer the core of courses (math, science, social studies, english), so that a math teacher would teach five math classes in a day, one of which would be with the youth apprentice group. These teachers would be given an extra "prep" period which would be used to visit a student at a job site.

This "prep" time to visit students at job sites, combined with, say, half the coordinator's time spent visiting students at job sites, is expected to yield about 35 hours per week of teacher time for coaching students at the job site.

The district will be seeking a grant for the full cost of this program—$150,000—in the first year. In year two the district expects to pick up half the cost.

Estimated budget in start-up year

(1) Staff	Teacher/Coordinator	$55,000
	Extra prep period for 4 teachers	$36,000(1/6 salary x 4)
(2) Other	(teacher development, curriculum development, other)	$59,000
Total 1991-1992		$150,000

What would this model be likely to cost on an ongoing basis after the start-up year, additional to regular high school? The key sources of ongoing extra cost are three fifths of the coordinator's time and the extra prep period for four teachers. Assuming a summer orientation and a travel budget, this adds up to minimal ongoing costs of about $94,000 per year. Divided among 25 to 35 students, this is an additional yearly cost per student of $2,700 - $3,800.

It is not likely that the 25-35 students required for this program will all come from the host high school. Some may come from other high schools in the district, in which case the schools lose some funding, but the district doesn't. Other students may come from other districts, in which case these districts would pay a tuition transfer to the host district.

Last three years. The post-secondary piece of the program would enable students to be pre-admitted into an area Associate degree program. They would take 12 credit hours per semester for six semesters, and they would work 28 hours per week. The difference in this Associate degree program would be a 3-hour course in problem-solving in the occupation, given in all six semesters. Also, a new technical course would be provided as an elective customized to draw on students' work-based learning.

At $75 per credit hour, 72 credit hours would cost $5,400, which students would pay for out of their earnings over the three years (about $150 per month tuition payment). In some cases employers will subsidize tuition costs.

7. No independent teacher team

The key characteristics of the fully integrated teacher team model are: (1) Participating students take most or all of their classes with regular high school students and teachers; (2) All participating teachers teach regular high school students as well as youth apprentices; (3) The participating teachers, including a coordinator or lead teacher, have relatively little or no administrative independence; (4) The program is based in a school.

This is probably the easiest to start up and replicate, since the program consists only of a connection to employers and a link with post-secondary opportunities. In effect, it is a combination of work-study and 2+2 or 2+4 programs. Although this model might be an improvement over the system's current ability to ease the transition from school to work, it would most likely fail to integrate learning from school and work in meaningful ways and is likely to result in a lower level of work-based learning.

7.1 Case Study 1: Tech Prep Associate Degree Health Occupations Project

TPAD Health Occupations Project, *Paris, Texas*
Work-based learning: 6 hours per week in 4-week hospital rotations. Some related curriculum.
Model: 2+2 Tech Prep program based in regular high school, integrated into normal classes.
Start-up funding: $203,000 (1988-1990). Source: State Department of Education, in-kind from school district.
Operational funding: minor. Source: school district.
Extra cost per student: minor.

The Tech Prep Associate Degree (TPAD) Health Occupations Project in Paris, Texas, is one of the earlier 2+2 programs. After two years of curriculum development, the first students (Juniors) were enrolled in September 1990. Although they take the same health-related vocational classes as their colleagues in the regular vocational health program, they do more independent studies in their Senior year, have more in-depth objectives to meet in their hospital work experiences, and get two credits of advanced placement at the local community college.

The program is *dissimilar* to the current definition of youth apprenticeship only in that the work experience component is unpaid and is a relatively small number of hours per week (six). TPAD provides useful insights into the cost of developing a four year technical trade-oriented curriculum, and into how to minimize cost and start-up difficulties and maximize replication by integrating the program with existing resources.

Curriculum development costs. The development of the four year curriculum sequence for nursing took $200,000 and two years of work by eleven people working part-time. Far less time would be required to develop another two associated specializations, and the nursing curriculum sequence could now be replicated fairly easily elsewhere.

Maximum integration with and use of existing resources. TPAD presents a low-cost, relatively straightforward option for credentialing work-based learning and skill attainment. It involves marginal changes in secondary and post-secondary schools and in workplaces, involving no changes in teaching methods across the disciplines. The special curriculum involves mostly independent study with a high school's existing allied health field teacher.

As a result, there are no additional costs to a program like this after initial development of the curriculum. Participating students work alongside students enrolled in the school's regular healthcare vocational course of study. There is no special orientation, no teacher development, no special staffing, no employer liaison. Students work at the local hospital, which is a partner to the agreement. After high school graduation, students get advanced standing at the local community college. Again, no special staffing is required.

It should be noted that in other trades, and in schools without vocational staff, special faculty might need to be hired. Also, if the work component is paid and is more significant, employer liaisons and teacher communication with workplace supervisors becomes very important.

7.2 Case Study 2: Portland Partnership Project

Portland Partnership Project

Work-based learning: work placements in afternoons and summers. Related morning "homeroom."

Model: based in two high schools in same district. Juniors and Seniors take regular classes and receive intensive counseling.

Start-up funding: $132,000 (1984). Source: Edna McConnell Foundation, Private Industry Council, school district.

Operational funding: $241,000 (1990-1991). Source: school district, PIC (federal dollars), business organization.

Extra annual cost per enrolled student: $1,850.

Extra total cost per graduate: $7,300.

The Portland Partnership Project provides work opportunities and intensive case management for disadvantaged Juniors and Seniors. Students take regular high school classes but have a special homeroom together every morning in which they discuss a range of workplace and other issues. They work in a variety of employment settings for several hours every afternoon and during the summers.

The Project is *dissimilar* from youth apprenticeship in that no attempt is made to connect learning at work with learning of the core academics in class. The program is also aimed at providing solid work experience for students, rather than on preparing them to enter a specific technical field with certifiable competencies. However, the program provides insight into the cost of a program which involves intensive case management provided by special staff, the cost of running an intensive summer orientation, the possibilities of having case management staff also lead a "reflection" period once a day, and start-up funding and growth patterns.

Cost. The Partnership Project's principal costs are the salaries of its director and two coordinators. With only 60 to 70 students enrolled at any one time, it is unusual to have so many non-teaching staff. They are intensively involved in counseling students and addressing special needs as they come up for these disadvantaged students. The coordinator (one in each school) also "teaches" the first class every day, which is a kind of homeroom, the only class Project students have together. This class is an opportunity for reflection on work experience, resume preparation, and other activities related to learning how to get and keep jobs.

The second largest budget item is the 12-day summer orientation which costs $20,000, involving seven teachers as staff. This is probably one of the most intensive summer orientations available to high school students as an introduction to the working world.

Start-up funding and growth patterns. Start-up funding came from a foundation and was matched by the Private Industry Council whose initial contribution was twice the school district's. In the intervening seven years, this proportion has flipped, with the school district carrying the greater share as the program proved itself. Start-up funding in 1984 was $105,000.

One significant cost-related change has been made since start-up. Initially, students not only had a first-period homeroom to themselves, but they also took "Partnership English" and "Partnership Math." Both these classes were taught by teachers whose time was donated by the school. But because of the expense of low student-teacher ratio in these classes (sometimes 5:1), the classes were reformulated as Business English and Math and opened to all students.

The Project was initiated in one school with one staff person in year one. A second staff person was hired for year two, and in year three a third coordinator was hired when the project expanded to a second school.

7.3 A Proposal: A hypothetical minimalist youth apprenticeship model

A minimalist approach to youth apprenticeship which fit most tightly with existing staffing patterns, yet which forged beyond cooperative education programs and 2+2 programs to some extent, might be as follows:

Work experience. Students would be matched with employers with the help of a placement coordinator (as in the Partnership Project or the LaGuardia Middle College High School) or a teacher with some extra time paid for (as in the Menlo Atherton Computer Academy). Unlike at LaGuardia, this would be paid work, probably most afternoons for two or three hours.

Academic classes. All classes would be taught by regular high school teachers who had received some special training. Either students would have their own classes together, or they would be mixed in with regular students. In either case, teachers would use applied, cooperative learning teaching methods that encourage the development of critical thinking and provide a recognizable link to work-based learning. Youth apprentices might have some special exercises or problem-sets more directly related to their field of emphasis. Teachers might be give some extra prep time to prepare and stay informed about workplace practices.

Vocational classes. Schools with occupationally-oriented staff could coordinate occupational offerings with the needs of youth apprentices. TPAD exemplifies a minimalist approach in which students are coached by a vocational teacher in their semi-independent studies.

Structured reflection time. A teacher, or perhaps the work placement coordinator, would teach or lead a structured reflection time to focus on empowering students in the world of work, coaching them on how to handle difficult situations, helping them develop a broader picture of their work and workplace, and giving them an avenue to discuss their reactions. This could be organized as a first-class "homeroom" as the Partnership Project does it.

Post-secondary learning. TPAD's link to a post-secondary program is a good illustration of a way to facilitate the transition to further education learning without making dramatic changes.

8. Lessons learned

What are the key lessons in this plethora of options for designing and funding school to career transition programs? At the risk of over-simplifying, some of the lessons we have learned from studying established programs and working with several youth apprenticeship programs in their design phases are outlined below.

Cost. Don't assume that innovation increases cost. LaGuardia is very innovative and only marginally more costly than regular high school. The Partnership Project is relatively costly, and is innovative in its case management approach and its "homeroom." But the rest of the school day is unchanged. A major cost challenge for programs that aim to have an occupational focus (such as youth apprenticeship) is getting up to sufficient scale. This may take several years, and start-up funding needs to take this into account.

Incentives. School districts, schools, and other groups underwrite and help grow these programs for a variety of reasons, and some districts have for years supported relatively expensive programs in order to meet the needs of a particular group of students. As programs are designed, though, it makes sense to maximize the incentives for schools and districts to participate. A first step is to house the program in a district and a school with a strong commitment to making it work. State policy makers can provide incentives for youth apprenticeship-type programs by compensating schools for improved student attendance and reductions in drop-out rates.

Administrative support. It is important that districts and schools commit long-term and consistent support. The Oakland Media Academy is an example of a program whose funding has fluctuated wildly. Its development has suffered from both this and inconsistent support from school officials in arranging for block programming.

Development time. Leave enough time to develop the curriculum and begin to identify work positions with participating employers. For some programs this development period spanned two years at about $100,000 per year. Others have started out much more modestly with a shorter lead time. The Academy replication time has been shortened to an eight month time frame, but only after years of learning and revision. In the cases of the two youth apprenticeship programs described in this paper, development time is planned at two years.

Teacher development. One of the yawning gaps in existing school-to-career transition programs is the dearth of teacher development. Most lead teachers and administrators bemoan this and some identify the resulting ways in which the program is failing to fulfill its potential. Often funding is provided at start-up only, not for new teachers joining the program after its inception.

Teacher responsibilities and responsibility for hiring. The most excited and long-staying teachers seem to have responsibility for a range of activities, including student recruitment and selection, curriculum development, program design, and various other administrative duties. This sharing of responsibilities also appears to contain costs by reducing the need for administrative staff, as exemplified by the LaGuardia Middle College High School, for example.

A common complaint is that the team of teachers has little or no control over who is hired into the team. Often, what makes an initial teacher team successful is that they hand picked

themselves and are highly committed. As openings are filled by seniority, teachers who have little understanding of or interest in team and student-centered teaching may come into the program. They may also be uninterested in carrying out the new responsibilities which come with the territory. Here the commitment of the principal, superintendent, and teacher's union is key to enabling the teacher team to hire effectively.

Joint planning period. If team teaching is to work, a joint planning period may be necessary. In the Media Academy's case, this is a weekly meeting. At the Menlo Atherton Computer Academy it is once a day. However in neither case are all courses in the basics (math, english, science, social studies) team taught. This would probably take considerably more than a weekly meeting, particularly in year one. The cost of this planning period (close to $10,000 per teacher for the California Academies, for example) may be a contribution that a host school would be willing to make since it is not an out-of-pocket expense, as in the case of the academies.

Block scheduling. If the teacher team is only partially independent, students will be taking some classes with regular students. In order to make it easier to pull students from classes for field trips, the academies, for example, have found block scheduling to be key. Should students be in the same core courses in this blocked schedule? Some programs have had trouble meeting the needs of students at different levels of math. As a result, the Media Academy has placed students in different math classes for the first time this year.

Counseling support. The level of counseling support needed by students will vary, of course. But the experience of almost every school to career program is that students need a tremendous amount of counseling support. The more challenging and unusual the program, the more likely that staffing will be needed to address problems as they arise. The Partnership Project's success, according to its director, has hinged in large part on the staff's ability to respond immediately to student and employer concerns and problems. The program has several thousand dollars per year budgeted to meeting immediate needs of students—bus passes, clothing, repair of a tire, a bunk bed, etc.

Summer orientation. Many programs don't have a summer orientation. But it is likely to be important if the program is significantly different from the norm, and especially if students may be working with a participating employer over the summer before the program starts. The orientation can also provide an in-depth introduction to students who may still not be sure this is for them. The most extensive orientation we have seen is the Partnership Project's, which lasts 12 days and costs $20,000.

We hope these lessons and guidelines serve as an aid to building the financial commitment that is necessary, though not sufficient, to support the pioneering work that must happen in each community.

9. Appendices

9.1 Case Study: LaGuardia Middle College School
9.2 Case Study: St. Louis Work-Study Program
9.3 A Proposal: The Pennsylvania Youth Apprenticeship Program
9.4 Case Study: The Oakland Media Academy/ Menlo Atherton Computer Academy
9.5 Case Study: TPAD Health Occupations Project (2+2, Paris, Texas)
9.6 Case Study: Portland Partnership Project

9.1 Case Study: LaGuardia Middle College High School

Design. The school was founded in 1973 after two years of planning and development work. Since then, the model has been replicated at 20 sites across the country. It is an alternative 4-year school of up to 500 students, based at a community college and involving 13 weeks of work experiences in each school year.

For youth apprenticeship, the Middle College experience is most useful as an indicator of the cost of establishing a program independent of regular high schools.

Cost components, additional to regular high school program. The Middle College schools cost little more than regular high schools. They are funded by the Average Daily Allowance for Alternative Schools, an amount awarded by formula to cover all school expenses other than building maintenance. The allowance is slightly higher than it is for regular schools. Beyond this, the community college contributes classroom space and security.

Although the student-teacher ratio is lower (20 - 25:1) than in regular high schools, the schools save money by: (1) reducing administrative, supervisory and disciplinary staff; and (2) expecting teachers to carry several roles including counseling, curriculum development and employer liaison.

Start-Up Funding

		Years 1 and 2 (1971 - 1973)
(1) Staff		
	Coordinator (full time)	n/a
	Curriculum Developers (4 full time)	n/a
(2) Other		n/a
Total 1971 - 1973		$195,000
Sources		
Foundations	Carnegie	$94,000
	Fund for the Improvement of Post-Sec Ed	$101,000

Notes:
(1) Staff: included a high school guidance counselor, a teacher of teachers, a university faculty member, a coop educator, and an administrative assistant. It is now recommended that the start-up development team include: the school's future principal, the school's future guidance counselor, the college liaison, and an administrative assistant, all full-time. The development period is now expected to take seven months. As a result, start-up costs are estimated at $60,000 - $100,000. Major activities of this team include student recruitment (from the 8th grade), establishing an organization, and community outreach.

continued

Implementation Funding: The Middle College Model

	Yr1	Yr2	Yr3	Yr4	
Number of Students	100	200	300+	450	
Student: Teacher ratio, total (including coop liaison & students on coop)	20	25	25	25	
(1) Staff					
Principal	1	1	1	1	
Faculty, classroom teaching	5	6	9	14	
Faculty, coop supervisors		1+	2	3	one teacher/50 students on coop
Faculty, assigned as coop liaison		1	1	1	develops internships
Counselors	1	1+	2	3	
Admin Support					
College Liaison (college staff)	1	1	1	1	
(2) Staff Development	$0	$0	$0	$0	get assistance from college
(3) Special Contracted Services	$0	$0	$0	$0	
(4) Special Equipment					same as regular high school
(5) Special Student Activities/Needs	varies				
(6) Summer Orientation (have summer school, short summer orientation)					
(7) Student Stipends/Subsidized Wages	$0	$0	$0	$0	
(8) Other Operational Costs Building rent					same as regular high school
Total 1990-1991	n/a				

Notes:
(1) Staff: The role of employer liaison, who develops internships, is rotated among teachers. Teachers acting as coop supervisors are expected to meet with students in their coop placements at least three times during the 13 week period. They are expected to be able to manage about 50 students.

(2) Staff Development: The first year team goes through a 2-3 week training program in the summer before start-up. This is paid out of the first year's allocation.

(5) Special Student Activities/Needs: The school raises foundation money to pay for special activities. Students are also eligible to take college courses without paying tuition fees and participate in community college clubs.

Sources of Funding

(1) School District	$3000 - $6000	Per student allowance
(2) City	$0	
(3) State Department of Education (direct)	$0	
(4) Federal Department of Education(direct)	$0	
(5) Foundations	$60,000 - $100,00	Start-up funding
(6) Community College partner source: legislative	varies	Building space, security, special equipment

Total varies with size of school and location

Contacts:
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9.2 Case Study: St. Louis Work-Study Program

Design. The St. Louis Work-Study Program is for Seniors. They take three classes in the morning either at the work site or in a building in the community, and then go to work in the afternoons. Currently 200 Seniors are enrolled in seven different work-study programs, including one in banking, and one at Ralston Purina in clerical and other office work.

Each program is staffed by two teachers who teach the three morning classes and perform the variety of roles required to keep the program going: recruitment (they visit area high schools and speak to students about the program, and hold information meetings for counselors and parents); selection of students; orientation; counseling; problem-solving with supervisors; addressing attendance problems of students (each teacher has a phone in the classroom and will immediately call home); evaluating student progress and learning on the job; curriculum development; and follow-up to track student progress after graduation.

Cost Components, additional to regular high school program

(1) Administrative Staff	
Administrative/Planning/ Counseling/Employer liaison	part-time, provided by school district
(2) Additional Teaching Staff, due to lower student/teacher ratios	4.5 teacher salaries, provided by school district
(3) Special Contracted Services	$0
(4) Special Equipment	in some cases provided by employers
(5) Special Student Activities/Needs	$0
(6) Summer Orientation	paid by some employers
(7) Student Stipends/Subsidized Wages	$0
(8) Teacher Development (above average)	$0
(9) Other Operational Costs	
Building rent/classroom space	contributed by employers
Supplies (typewriter ribbon...)	50% of operational budget
Periodicals, Computer software, mileage, Postage	50% of operational budget
Special transportation	provided by school district
Total 1990-1991	confidential
Actual cost saving:	
(10) Teacher salaries (due to fewer classes taken)	$0 teachers perform other duties

Notes:
(1) Administrative staff: Administration is carried out by the Supervisor of Vocational Programs, who administers several programs. Percentage of time spent on program was unavailable. The cost of administrative time is not assessed to the program.

(2) Additional teaching staff: Teaching staff consists of 9 full-time teachers. The district's student-teacher ratio is 28:1. The program's de facto ratio is 14:1, a result of the number of work slots made available by participating employers. So the district is actually carrying 4.5 more teacher salaries that it would without the program. This cost is not assessed to the program.

(6) Summer Orientation: One or two employers organize and pay for a summer orientation.

(7) Student Stipends/Subsidized Wages: Employers pay student wages.

(8) Other Operational Costs: For seven of the nine work-study program sites, classes are held at the employer's site. 100% of each program site's operational budget is spend on supplies and the other items listed. In addition, a special administrative account holds funds for teacher development, mileage reimbursement above and beyond each program site's budget allocation, and transportation of students.

(10) Teacher salaries saved: Work-Study students take only three classes, compared to the six classes taken by regular high school seniors. So the additional cost of the low student-teacher ratio is made up for by the fewer number of classes that must be staffed by a teacher.

Cost per Student, additional to average district cost

Number of students graduating, enrolled, serviced per year: close to 200
Total and annual cost information is confidential.

Sources of Funding

(1) School District	100% of funding
(2) City (direct)	$0
(3) State Department of Education (direct)	$0
(4) Federal Department of Education (direct)	$0
(5) Foundations	$0
(6) Other: participating employers	class space, wages, liaison, some other
Total 1990-1991	confidential

continued

Notes:
(1) School District: The school district funds the program in the same way it funds the operational budgets of each school and other program: an annual student allocation is multiplied by the total number of student slots in the program (constrained by employers) to provide the operational budget. Beyond the operational budget, the district absorbs the cost of extra teachers due to the low student-teacher ratio, administrative personnel costs, and special transportation costs. No employer match is required.

Start-Up Funding and Growth. Unavailable.

Contact:
Frank Logan, Supervisor of Vocational Programs, Saint Louis Public Schools, 3815 McCausland Avenue, St. Louis, MO 63109. Ph: (314) 781-6615 ext. 254.

9.3 A Proposal: The Pennsylvania Youth Apprenticeship Program
By Brian Bosworth, Consultant

[Note: This was written in March 1991. While many design elements have changed since then, we include this here as a good example of how cost parameters can be defined and operating costs estimated.

As of August 1991, one site in Pennsylvania is expected to start up in September 1991 with about 23 metalworking youth apprentices at a first-year operational cost of $200,000. This includes the salaries of two full-time teachers and two part-time teachers based at a local university. Other sites will enroll their first students in September 1992, and will be based at local high schools, with one dedicated teacher and block scheduling so that youth apprentices stay together, with regular high school teachers rotating through. The extra per pupil cost is expected to be some of the cost of this dedicated teacher, until year two when the student-teacher ratio rises.

Start-up costs include $370,000 for curriculum development and teacher training over two years (1990-1992) and state and site management costs of $250,000 over the first year (1990-1991). State and site management start-up costs will also be incurred over the second planning year (1991-1992).]

We have seen the 'ideal teaching team' as consisting of four teachers and the 'ideal apprentice cluster' as consisting of 50 apprentices whose jobs are close enough to each other that one teaching site would be possible. We have thought that we need a teaching team of this size in order to get the breadth of discipline and teaching experience that the curriculum will demand. And we have thought that we need this many apprentices in order to make the per apprentice cost within sight of the financial capability of the schools.

Time in the work place and in the school place. Our curriculum planning has assumed that, in the first year, the youth apprentices would be in the school place for an average of 20 hours per week for about 44 weeks. (The first half of the year might average two days in the work place and three days in the school place per week but this would probably reverse during the second six months.) This would be close to 900 hours a year, not that much different than regular high school.

This schedule would allow teachers an average of two and one-half days per week to visit job sites. Assuming three two-hour visits per day, the four person team could make about 120 visits per month. For the "ideal" 50 apprentice cluster that would enable them to spend just about five hours each month at the job site of each apprentice. Most employers would not see that as intrusive.

Cost and Scale Estimates. Our original cost estimates were as follows:
(1) For planning purposes, an average (statewide) salary for an experienced and well trained teacher was budgeted at $40,000. That buys about 187 days during the school year.

(2) This program will require an additional number of teaching days during the summer when school is not in session plus a few more teaching days during the regular school year (on days when regular school is not in session). An additional 70 days of time per year was estimated.

(3) At about $200 per day those additional days would add about $14,000, resulting in an annual average salary cost per teacher of $54,000. A 25% fringe benefit allowance would suggest a total annual average teacher cost of $67,000, times four for $270,000 for the full team.

(4) Each team would need a modest transportation allowance of $4,000 per year and a contingencies/materials/resources budget of about $6,000 annually.

(5) The full-time team should have available about $20,000 per year with which to purchase part-time, specialized instruction from a local institution or from an individual teacher or skilled worker. Our budget projections did not allow for the renting of any educational facilities.

(6) Our total cost would therefore be $300,000 per teaching team. If each team of teachers had 50 apprentices, the per apprentice cost would be about $6,000 per year.

Six thousand dollars per year per student is higher than what many of the schools tell our coordinators they are willing to pay. But, it is at least in a range which permits some discussion. If there are only 25 students per four person teaching team, the cost is doubled—to $12,000. That is out of the realm of the negotiable.

This is essentially a year one, start-up problem. As the program moves into year two, we would not have the same sizing difficulties. We could add 20, 30, or 40 apprentices to each cluster in year two without having to increase the size of the teaching team at the start-up ratio.

The teaching teams can gradually increase to handle gradual increases in the number of apprentices. Any more than four teachers per team gives a lot of flexibility in the allocation of time. The teachers can and should periodically re-allocate their time and attention among first, second, third, and forth year apprentices as circumstances change and the program evolves. Each team of teachers needs this flexibility. The issue is not so much the on-going ratio of teachers to students as it is the breadth of subject matter experience and ability of the teachers.

So what do we do? It now looks like we will not have clusters of 50 (or even 40) apprentices so close together that they could be served, as our model assumed, by one team of teachers. As best we might project from current information, we could have two cluster of about 30 apprentices...It therefore looks as though we may have a critical, perhaps crippling, problem. We may not in any region have a program sized at the level we can afford.

We appear to have five options...We could abandon the notion of an independent teaching team. Secondly, we could reduce the size of our teaching team below the "ideal" level. Thirdly, we could try to serve two clusters with the same team. Fourthly, we could try to get some special money to subsidize the teaching costs in the start-up year. Finally, we could try to piece together a program with only one school district, thereby avoiding the whole issue of tuition transfers. These options are not all mutually exclusive.

1. Abandoning the teaching team approach. We could try to rely on "regular" teachers, perhaps assigned to an area vocational school. However, this would force us to abandon also the notion of an integrated and work-based curriculum. It would be tough to use an inter-disciplinary curriculum without an inter-disciplinary team of teachers. And if the teachers had no special knowledge of metalworking and no ability to relate their courses or their assessment methods to the field of work, we would not have work-based learning. Scheduling problems alone might be overwhelming as we tried to organize regular classes in a way that would permit the students to work several hours a week. In a sense, what we would have through this approach is what now exists—vocational education with some co-op work placement.

2. Cutting the size of the teaching team. If the team were reduced to three full-time teachers, if we bought only 50 days of additional teacher time and if the budget for part-time instructional services were squeezed down, we might be able to reduce our annual costs for the team to about $220,000. At 40 apprentices per team, our cost would be $5,500 per student and that could be doable, but at 30 apprentices per team, our costs would be over $7,300 apiece. We are being told that just won't sell financially, but it might be the only way to serve small clusters of apprentices.

Another approach might be a two-person team of teachers. If we could get some school to agree to fit our students into their existing classes, we could look to the two specially trained teachers to help the students synthesize this "off-the-shelf" instruction and to visit the apprentices in the workplaces. We would still have a problem in scheduling these regular classes, but this "intensive home room teaching" approach could retain a few elements of an integrated curriculum and work-based learning.

I think we should avoid any approach which tries to get by with less than three full-time members of the teaching team. I believe the result would be significant "attrition" of our objectives. So I would recommend that if we cannot, in any particular site (or at all sites), afford a program which uses a minimum of three full-time teachers, we should delay any program at that site until we can figure out a way to pay for it.

Hiring teachers for only the regular school year could save yet another $37,500 annually off our three member "no frills" teaching team. This would bring the 40 apprentice cluster down to $4,560 per student and the 30 apprentice cluster down to $6,250 per student, back in the range of the negotiable. However, this approach would seriously erode the quality of our effort and just might guaranty failure. Further, we need the teachers during the summer months to work on curriculum design for the second year of the project. I think we should firmly role out the option of shutting down the program in the summer.

3. Having one team of teachers work with two clusters of apprentices. If we had, say 25-30 apprentices in one cluster and 25-30 in another, and if the clusters were within 40 to 50 miles of each other, we could attempt to serve both with the same team of teachers. The teachers would alternate between the two different teams.

An obvious cost of this approach is the amount of time available for the teachers to go to the workplaces. We would most certainly need a team of four to accomplish this, because one teacher would have to be free every day to visit work sites. If we used a "no frills" four member team (adding about $5,000 per year for the extra transportation), we might be able to manage this for a total of about $5,500 per student per year for 50 apprentices in two clusters or $4,600 for 60 apprentices in two clusters.

Every day, one member of the team of teachers (obviously not always the same one) would be out visiting work places. If the teacher could visit three shops a day that would be about 64 visits per month (assuming two hours per visit and two hours driving). If every day another teacher could slip out and visit one more shop, that would be about 85 visits per month. This would allow teachers to spend only about three and one-half hours each month at the work place of each apprentice. That's not very much and might have an important effect on the quality of the program. There would also be a certain wear and tear on the teachers which we would have to take into account.

If we had a five member team with this kind of two cluster responsibilities, we could add another 64 shop visits each month for another two and one-half hours per visit in the shop. The annual per apprentice cost would be somewhere around $6,750 per student for two groups totaling 50 and $5,625 apiece for two groups totaling 60. It would cut down on the wear and tear.

4. Subsidizing teaching cost in the start-up. The most logical and flexible source of funding that the State might have would probably be the new Tech Prep money. It appears that the State's need to use those funds to finance programs for special needs young people would virtually rule out this option. For our program as a whole, we could not (and should not) make the case that we will have a significant number of special needs kids. While individual districts could conceivably apply for Tech Prep money to finance the tuition costs of special needs kids who just might be in the program, it appears that the plans of the State to encourage large projects would preclude that.

5. Working with only one school district. To some degree we have a financing problem because we are working with several school districts in any region. They all have to look at this program as involving a tuition transfer. If we had a youth apprenticeship program which would take 30 to 50 kids out of one single high school, or even one single district, we might be able to work out a special approach with that district. If the district doesn't have to contemplate the actual payment of money to an outside entity, it might be willing and able to work with us on freeing up a small team of teachers to operate the program on a "school within a school" basis.

This approach to some extent would beg the question of what we are seeking to demonstrate. We know that many, probably most, apprenticeable occupations are not so geographically concentrated that the cluster of employers could work with only one district. If we believe that youth apprenticeship will inevitably require a multi-district approach, we ought to keep trying to figure out how to do that.

Contact:
Jean Wolfe, Director, Pennsylvania Youth Apprenticeship Program, c/o MANTEC, PO Box 5046, York, PA 17405. Ph: (717) 843-2898.

9.4 Case Study: The Oakland Media Academy/ Menlo Atherton Computer Academy

Design. The Oakland Media Academy, at Fremont High School, exposes about 150 10th through 12th grade students to journalism and broadcast media work. The Menlo Atherton Computer Academy exposes students to work in the computer field. In the Academy model, students take a combination of special classes for academy students only and other classes with non-academy students. In both these academies there is a considerable amount of team teaching, and time for inter-disciplinary curriculum planning is built into academy faculty schedules. Academy classes are scheduled as blocks to make it easier for students to be pulled out of classes to go on field trips. Students get related work experience at the computer academy. At the media academy the work experience component is being developed.

A District/City-Funded Academy: The Oakland Media Academy

Cost Components, additional to regular high school program

(1) Administrative Staff		
Administrative/Planning/ Counseling/Employer liaison	$20,000	2 planning/admin periods for teachers
(2) Additional Teaching Staff, due to lower student/teacher ratios	$50,000	one full-time teacher (incl benefits)
(3) Special Equipment	$20,000	computers, other
service contracts, repairs	$3,000	
(5) Special Student Activities/Needs		
field trips (Outward Bound, others)	$5,000 - $7,000	
(6) Summer Orientation	$0	no summer orientation
(7) Student Stipends/Subsidized Wages	$40,000	provided 1990/91 for first time
(8) Other Operational Costs		
Building rent	$0	based in high school
Misc supplies (books, paper...)	$15,000 - $18,000	
Printing (student paper & magazine)	$8,000	
Substitutes during trips	$2,000	
Other	$2,500	
(9) Curriculum Development	$4,000 - $5,000	for summer, after school and weekend work
(10) Teacher Development	$5,000 - $6,000	to attend journalism, magnet school conferences
Total 1990-1991	$177,000	

continued

Notes:
(1) Administrative staff: At the computer academy, a teacher is paid for 20 hours beyond her full-time teaching job, to do the job placement and counseling. At the media academy the lead teacher is given an extra planning period (which hasn't up until now required job placement since that was not part of the program). These administrative duties include: record keeping; meeting downtown with funders/advisory board/others; planning curriculum development and other staff meetings; developing curriculum; planning trips; arranging for students to be pulled out of classes as necessary; and sitting in on other classes.

(2) Additional teaching staff: With a student-teacher ratio of 25:1 (22:1 is the actual state mandate for academies), versus a district average of 32:1, the lower class size results in the need for one extra teacher.

Cost per Student, additional to average district cost

Excluding the $40,000 allocated to the Media Academy this year to develop and subsidize student work placements (this may be a one-time contribution), total program cost is about $137,000 per year.

Number of students graduating per year: 40

Number of students enrolled and serviced per year: 147
(Sophomores, Juniors and Seniors)

Total extra cost per graduating student: $137,000/40 = $3,425
(This is slightly over twice the annual cost of the district's average graduating student.)

Annual extra cost per student serviced: $137,000/147 = $932

Sources of Funding

(1) School District	$10,000	for planning period
(2) City of Oakland Redevelopment Authority	$40,000*	subsidy for work experience
(3) State Department of Education (direct)		
Operating Budget	$67,000	
Staff (for low student: teacher ratio)	$50,000	
(4) Federal Department of Education	$0	
(5) Foundations	varies, minor	
(6) Other: school	$10,000	contribution of planning period
Total 1990-1991	$177,000	

* May be a one-time grant

Start-Up Funding and Growth. The Academy began with funding from the district, not from the state as the Menlo Atherton Computer Academy did. It has suffered from large irregularities in funding. Note: due to complexities in funding sources, Yr5 is not comparable to previous years.

	Yr1 (1986)	Yr2	Yr3	Yr4	Yr5
District Funding	$45,000	$30,000	$10,000	$20,000	$60,000
State Dept of Education				$15,000	$67,000
Foundations			$20,000		
City of Oakland					[$40,000]
Fremont High School					$10,000
Total Revenue for operating costs	$45,000	$30,000	$30,000	$35,000	$137,000+

A State-funded Academy: Menlo Atherton Computer Academy

State-funded academies receive an initial $15,000 start-up grant, and $67,000 per year thereafter to cover the additional faculty member required due to low student-teacher ratios, and ongoing operational costs. In exchange, they must conform to specific guidelines. For example, student-teacher ratios must not exceed 22 to 1. The funding stream for these academies appears to be more stable than district-funded academies such as Oakland's Media Academy.

Cost Components, additional to regular high school program

(1) Administrative Staff Administrative/Planning/ Counseling/Employer liaison	n/a	performed by one of teachers
(2) Additional Teaching Staff, due to lower student/teacher ratios	$50,000	one full-time teacher (incl benefits)
(3) Other operational costs	$25,000	
Total 1990-1991	$75,000 +	

Notes:
(1) Administrative staff: A teacher is paid for 20 hours beyond her full-time teaching job, to do the job placement, counseling, and other administrative duties. These include: record keeping; meeting downtown with funders/advisory board/others; planning curriculum development and other staff meetings; developing curriculum; planning trips; arranging for students to be pulled out of classes as necessary; and sitting in on other classes.

(2) Additional teaching staff: With a student-teacher ratio of 20:1 (22:1 is the actual state mandate for academies), versus a district average of 32:1, the lower class size results in the need for one extra teacher.

Sources of Funding

(1) School District	$40,000	contribution of 1 common planning period
(2) State Department of Education (direct)		
Extra staff person due to low s:t ratio	$47,000	
Operating Budget	$20,000	
(4) Federal Department of Education	$1,500	for voc ed materials
(5) Foundations	varies, minor	
(6) Other		
business	20 computers	a computer company
student fundraising	$3,000	for mentor lunches, picnic, orientation
City	$0	
Total 1990-1991	$111,500	

Notes:
(2) State Department of Education (direct): The State DOE provides up to $67,000 per year to fund a state academy. State academies must follow specific guidelines, such as a student-teacher ratio not to exceed 22:1. Each academy must enroll at least 90 students. If not, the state contribution is pro-rated. Since Menlo Atherton is a "Basic Aid" school, it does not receive average daily attendance (ADA) monies from the state. As a result, the academy's high average attendance rates do not make money for the district in the same way that the Oakland Media Academy does (it gets ADA monies).

Contacts: Steve O'Donahue, Lead Teacher and Director, Oakland Media Academy, Fremont High School, 4610 Foothill Boulevard, Oakland, CA 94601. Ph: (415) 534-4381. Dennis Lose and Beverly Parks, Menlo Atherton Computer Academy, Menlo Atherton High School, 555 Middlefield Road, Atherton CA 94027. Ph: (415) 327-5131 and (415) 321-6576.

9.5 Case Study: TPAD Health Occupations Project (2+2, Paris, Texas)

Design. This is a 2+2 program starting in 11th grade and taking students through the Associate degree. The curriculum is designed on the career ladder concept in that exit points are built in for nurse aide, Licensed Practical Nurse and AON (RN). After two years of curriculum development, the first students (Juniors) enrolled in September 1990.

The program is similar to youth apprenticeship in that it has a built in transition to the Associate degree program and offers some work-based learning (6 hours per week) in the form of 4-week rotations at a hospital, for which students earn credit. The curriculum is competency based and students receive verification of competencies mastered via a standard competency profile as they progress through the program, grade by grade and course by course.

Cost components, additional to regular high school program. TPAD has no additional costs beyond the regular program. The three pilot high schools each have a faculty person who traditionally teaches the allied health fields course. TPAD students take this same class, except that they do more independent study in their 12th year, and must demonstrate mastery of competencies in nursing in their lab, theory, and clinical work in both grades 11 and 12.

Because the program is in a rural area and the numbers of participating students are expected to be small, TPAD confronted a dilemma. Since the college has so few nursing students, how could it accommodate both those students who would be more advanced after having been through the first two years of TPAD, and those without that background? The solution was to build in a "leveling" course for non TPAD students. This leveling course is so designed that it provides specific objectives for the 2+2 students and specific objectives for the non-2+2 students, thereby becoming a one track program that can accommodate both. TPAD students get these two credits without taking the full course. As a result the college will avoid incurring the cost of special higher level courses for TPAD students only.

After two years of development work, and with the first 12 students enrolled in the program, the project's budget for 1990/1991 is $30,000. This pays for limited staff time and travel to provide technical assistance inside and outside the state and/or to develop new 2+2 Tech Prep Associate degree programs.

TPAD's planning and development phase. TPAD's planning and development phase is most instructive. It started curriculum development "from scratch," taking from November 1988 to June 1990 to develop the basic course outlines for the first two years of basic competency development and for all four years of the nursing specialization. (The staff ran out of time and money to develop the other three specializations for which there was employer demand.)

continued

Start-Up Funding

	Yr 1 (1988)	Yr 2
(1) Staff		
Principal Investigator (part time)	$27,500	$33,189
Jr. College Administrator	$6,000	$6,000
Admin support	$3,000	$10,000
(2) Consultants		
Curriculum writers (7)	$34,568	$49,388
Instructional Design Specialist (1)	$8,000	$11,000
(3) Travel		
State-wide advisory committee	$2,500	$3,400
Staff	$5,000	$5,500
(4) Other operational		
Computer, supplies, postage, phone brochure printing	$11,000	$8,075
Total 1988 - 1990	$97,560	$106,552

Notes:

(1) Staff: The Principal Investigator played a coordinating role and conducted a survey of area allied health employers to identify hiring needs. Half-time was sufficient. The initial contract specified that Nursing was to be the priority occupation for 2+2 curriculum development, however the survey indicated employment needs for the occupations of Medical Lab Technician, Radiologist Technician and Physical Therapy Assistant. Due to time restraints, some curriculum development occurred in these three areas, but major emphasis was on the basic (curriculum course outlines) for nursing education. The seven curriculum consultants included secondary and post-secondary personnel for all four occupational areas identified by the survey.

(2) Consultants: These included two secondary and five post-secondary teachers. They worked on average about eight hours per week, in the evening and on weekends. In the first year meetings of the entire team were held weekly. In the second year they were held bi-weekly. Teachers held regular teaching jobs in addition. The Instructional Design Specialist was from North Texas State University. His average number of hours was approximately six hours per week.

(3) Travel: Curriculum developers lived over 100 miles from the schools, in different directions. This is the reason for the high travel budget.

Sources of Funding

	Yr 1	Yr 2
(1) School District	donated clerical support and facilities	
(2) City	$0	$0
(3) State Department of Education (C. Perkins funds)		
Texas Higher Education Coord. Board	$49,971	$57,000
Texas Education Agency (secondary)	$47,589	$49,552
(4) Foundations	$0	$0
Total 1988 - 1990	$97,560	$106,552

Contact:
David Ingram, Tech Prep Associate Degree (TPAD) Health Occupations Project, Paris Junior College, 2400 Clarksville Street, Paris, TX 75460. Phone: (903) 784-9248. FAX: (903) 784-9370.

9.6 Case Study: Portland Partnership Project

Design. The Portland Partnership Project provides work opportunities and intensive case management for disadvantaged Juniors and Seniors. Students take regular high school classes but have a special homeroom together every morning in which they discuss a range of workplace and other issues.

Cost Components, additional to regular high school program

(1) Administrative Staff		
Administrative/Planning/ Counseling/Employer liaison	$95,800	Salary, 1 Director, 2 Coordinators
	$38,000	Benefits
	$11,000	Summer Job Developer
(2) Additional Teaching Staff, due to lower student/teacher ratios	$0	Students in regular classes
(3) Special Contracted Services	$0	
(4) Special Equipment	$0	
(5) Special Student Activities/Needs	$5,000	Awards dinner, incentives
	$6,000	Clothing
	$1,500	Bus passes
	$1,000	Bus trips
(6) Summer Orientation	$21,000	Staffing, 7 teachers, 12 days
	$9,200	Supplies
(7) Student Stipends/Subsidized Wages	$40,000	(Cut to $16,000 for summer 1991)
(8) Teacher Development (above average)	$0	
(9) Other Operational Costs	$12,500	Phones, mileage for conference attendance, etc.
Building rent	$0	Provided by school
Total 1990-1991	$241,000	
Actual cost savings		
(10) Teaching Staff (due to fewer classes taken)	$0	Students take regular load.

Notes:
(1) Administrative Staff. The Director and two Coordinators (each participating school has a coordinator) play an intensive case management role with students. These counseling and support services are provided to about 130 students per year. The number of students in the program is constrained by the number of students a coordinator can handle: not more than about 30 enrolled and 30 incoming, with about 5 who have graduated requiring services. The

coordinators teach a morning homeroom class which is the only time at which Partnership Project students are all together. A summer job developer is hired during the months of March to September to create placements for incoming students after their summer orientation.

(5) Special Student Activities/Needs. It is important that the program have some 'flexible' money to meet immediate student needs for clothing, a spare tire, or a bed, for example. Program staff's ability to surmount barriers as they appear is key to gaining students' trust, support, and faith that they too can surmount obstacles. Bus passes are provided free in the student's first summer. In the second year they are provided as needed although students are expected to purchase bus passes out of the wages they earn.

(6) The summer orientation lasts 12 days, starting the day after school is over in June. The understanding is that students will be placed in jobs if and only if they pass the orientation. Teachers receive 10 hours of training prior to the summer training. These hours are included in their total summer orientation pay (10 hours training @ $11/hour; 12 days work at 10 hours per day at $11/hour; 1 day at 10 hours to close up program; 10 hour days include 8 hours in the classroom, 1 hour lunch duty, 1 hour organizational time at night to keep up with recordkeeping).

(7) Student stipends complement JTPA summer job subsidies for which some students are eligible. Generally 25 students are provided subsidies of $1600 each for the summer. These dollars can only be expended in the summer. Therefore all students must be transitioned to private sector dollars at summer's end.

Cost per Student, additional to average district cost

Number of students graduating per year: 30-35

Number of students enrolled per year: 60-70
(Juniors and Sophomores)

Number of students serviced per year: 130
(60 Juniors and Seniors, 60 Sophomores in application process, 10 Graduates)

Total extra cost per graduating student (additional to average district cost):
$241,000/33 = $7300

Annual extra cost per graduating student: $241,000/65 = $4700
(Based on half of graduates in program 2 years, half in program 1 year.)

Annual extra cost per student serviced: $241,000/130 = $1850
(This is 34% of the district's average high school cost per pupil.)

continued

Sources of Funding

(1) School District	$154,000	
(2) City	$0	
(3) State Department of Education (direct)	$0	
(4) Federal Department of Education (Title IIB, IIK) through Private Industry Council	$86,000	
(5) Foundations	$0	
(6) Business: Business Youth Exchange	$1,000	
[Business/Student wages		$60,000-$70,000]
Total 1990-1991	$241,000	

Start-Up Funding and Growth

Start-up funding for the Portland Partnership Project came from the Edna McConnell Foundation ($30,000 over two years, most spent in year one on the project coordinator's salary) and was matched by the Private Industry Council whose initial contribution was twice the school district's. In the intervening seven years, this proportion has flipped, with the school district carrying the greater share as the program proved itself. Start-up funding in 1984 was $105,000. The program's cost structure today is similar to its cost structure in year 3 (1986).

One significant cost-related change has been made since start-up. Initially students not only had a first-period homeroom to themselves. They also took "Partnership English" and "Partnership Math." Both these classes were taught by teachers whose time was donated by the school. But because of the expense of low student-teacher ratio in these classes (sometimes 5:1), the classes were reformulated as Business English and Math and opened to all students.

Portland Partnership Project, approximate numbers:

	Year 1 (1984)	Year 2	Year 3
(1) Director	$31,400	$31,400	$35,000
(2) Coordinator/Advisor			
School I	$0	$14,000	$35,000
School II			$35,000
(3) Teacher time (2 periods)	school donated	school donated	school donated
(4) Summer Job Developer	$11,000	$11,000	$11,000
(5) Curriculum and Teacher Development	$20,000	$2,500	$1,500
(6) Summer Orientation	$20,000	$20,000	$20,000
(7) Student Wages	$30,000	$25,000	$15,000
(8) Operational Costs	$20,000	$20,000	$20,000
(9) Office space [valued at $1,500/mo]	school donated	school donated	school donated
Total Cost	$132,400	$123,900	$172,500

Notes:
(5) Curriculum and Teacher Development: The bulk of curriculum development occurred in year 1. Funds in the next two years were spent on supplemental texts of workbooks. Staff training has been a problem because after the first year there was no money left to do ongoing training. The school district requires programs pay for time after the regular school day.

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